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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,519	10/25/2000	Jeffrey H. Mumm	38,096	2591

7590 01/21/2003

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EXAMINER

GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

7

DATE MAILED: 01/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/696,519

Applicant(s)

MUMM ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 28-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 34-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to Amendment A filed on 11/21/02. The 35 U.S.C. 102 and 103(a) rejections using Smith et al. are withdrawn in favor of Smedberg and Bieser et al. Smedberg and Bieser et al. teach a stitch bind composition having a low viscosity, and they teach small application rates for applying the composition. It is noted Smith et al. does teach a thermoplastic binder applied to the primary backing having the stitch bind composition (tuft lock coating) already applied thereon (See Figure 3 and Column 5, lines 5-10).

Election/Restrictions

2. Applicant's election with traverse of Group I, claims 1-27, in Paper No. 5 is acknowledged. The traversal is on the ground(s) that applicant's single inventive concept is reflected in both groups of claims. This is not found persuasive because the restriction requirement properly set forth that the inventions were distinct as evidenced by their different classifications. A search for one of the inventions would not necessarily include a search for both inventions.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-27 and 34-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. In claims 1 and 23-27, it is unclear as to when the thermoplastic binder is applied to the primary backing. Is the thermoplastic binder applied to the primary backing before the stitch bind composition is applied? Is the thermoplastic binder applied to the primary backing after the stitch bind composition is applied? It appears from the Figure in the specification that the thermoplastic binder is applied to the primary backing after the stitch bind composition is applied. This issue should be clarified and reworded as appropriate.

6. The term "about" in claims 1, 3, 4, 13, 23-27, 38, 41, and 44 is a relative term which renders the claims indefinite. The term "about" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Regarding claims 1, 4, 13, 23-27, 38, 41, and 44, the claims and the specification are unclear as to the tolerance "about" gives to the viscosity and the application rate. Regarding claim 3, the claim and the specification are unclear as to the tolerance "about" gives to the organic polymer content of the stitch bind composition.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
9. Claims 1-5, 13-19, 21-27, 34, 38, 41, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smedberg (U.S. Patent 3,684,600) in view of the admitted prior art (Claim 1 and Specification pages 1-7).

Smedberg is directed to a process for manufacturing a tufted carpet with high fuzz resistance (Column 1, lines 14-24 and Column 2, lines 10-12 and Column 5, lines 74-75). Smedberg teaches a method for manufacturing the tufted carpet comprising supplying a tufted primary backing having a bottom surface (stitched side), applying to the bottom surface a low viscosity aqueous pre-coat adhesive solution (stitch bind composition), drying the pre-coat, coating a backsizing composition (thermoplastic binder) on the pre-coat, and laminating a secondary scrim (additional backing) to the backsizing composition (Figure and Column 3, lines 1-5, 11-14 and Column 6, lines 28-34 and 49-51). Smedberg teaches the primary backing comprises spunbound polypropylene (Column 8, lines 36-38). Smedberg teaches the pre-coat

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adhesive comprises an aqueous component and an organic polymer component that is film forming and thermoplastic (e.g. polyethylene, ethylene/acrylic acid copolymers, styrene/butadiene copolymers, etc.) (Column 5, lines 27-47 and Column 6, lines 28-34 and 49-51). Smedberg teaches the organic polymer component is less than 40 percent of the pre-coat adhesive (Column 6, lines 30-33). Smedberg teaches the pre-coat adhesive has a low viscosity, 2-2000 cps, to be effective, i.e. because the pre-coat has a low viscosity it can readily penetrate the fiber bundles on the stitched side of the primary backing (Column 3, lines 61-74 and Column 5, lines 18-20). Smedberg teaches the pre-coat adhesive is applied in amounts of 1.5 oz or less. However, Smedberg teaches the necessary amount of pre-coat adhesive is dependent on the carpet yarn density and the effectiveness of the adhesive itself (Column 6, lines 52-60). Smedberg further teaches the thermoplastic binder comprises resins such as ethylene/vinyl acetate, polyethylene, and ethylene/acrylate copolymers (Column 7, lines 1-3). Smedberg is silent as to applying the backsizing composition (thermoplastic binder) in a manner other than coating such as by extrusion or melting/softening a solid binder. It is noted Smedberg teaches the backsizing composition can be applied by means other than applicator rolls (coating) (Column 3, lines 37-41). Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated applying the backsizing composition (thermoplastic binder) taught by Smedberg through extrusion or melting/softening the binder rather than coating as these techniques for applying a thermoplastic binder to a tufted primary backing were well known in the art as shown for example by the admitted prior art.

Regarding claims 16 and 17, Smedberg is silent as to the organic polymer component of the pre-coat adhesive comprising a crosslinkable organic polymer. One of ordinary skill in the

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art at the time the invention was made would have readily appreciated using as the organic polymer taught by Smedberg a crosslinkable organic polymer such as crosslinked styrene butadiene copolymer as crosslinkable organic polymers were known organic polymer binders as shown by the admitted prior art, only the expected results would be achieved.

The admitted prior art is directed to known techniques for applying a thermoplastic binder to the stitched side of a tufted primary backing. The admitted prior art teaches it was known to extrude the binder onto the backing (Claim 1, lines 7-8). The admitted prior art teaches it was also known to melt/soften a solid binder in contact with the backing (Claim 1, lines 8-10). The admitted prior art teaches known organic polymers (such as crosslinked styrene-butadiene copolymer) for use in aqueous binder compositions (Specification page 2, lines 8-10).

10. Claims 6-8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smedberg and the admitted prior art as applied above in paragraph 9, and further in view of Kato (U.S. Patent 4,836,871) and Bogdany (U.S. Patent 4,836,871).

Regarding claims 6-8, Smedberg and the admitted prior art as applied above teach all of the limitations in claims 6-8 except for a teaching on applying the aqueous pre-coat adhesive as a spray, foam, or froth. It is noted Smedberg teaches the pre-coat can be applied by means other than applicator rolls (coating) (Column 3, lines 37-41). Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated applying the aqueous pre-coat adhesive taught by Smedberg as modified by the admitted prior art as a spray, foam, or froth as it was well known in the art to apply aqueous binders using these techniques as shown for example by Kato and Bogdany.

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Regarding claim 20, Smedberg and the admitted prior art as applied above teach all of the limitations in claim 20 except for a teaching on the organic polymer component of the aqueous pre-coat adhesive comprising a styrene acrylate copolymer. Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated using as the organic polymer component taught by Smedberg as modified by the admitted prior art a styrene acrylate copolymer as it was a known organic polymer component for use in an aqueous binder composition as shown by Kato.

Kato is directed to using a resin aqueous emulsion or a heat crosslinkable resin aqueous emulsion to adhere a base fabric (tufted carpet) to a secondary surface (Column 4, lines 16-37 and 41-68). Kato teaches that the resin aqueous emulsion may comprise a number of organic copolymers including a styrene acrylate copolymer, such as styrene-methyl methacrylate copolymer (Column 6, lines 63-68 and Column 7, lines 1-4). Kato further teaches applying the resin aqueous emulsion as a spray, foam, or the like (Column 8, lines 13-15). Bogdany is directed to a carpet backing adhesive used to adhere a tufted carpet to a secondary backing. Bogdany teaches applying the adhesive tufted carpet as a froth (Column 2, lines 12-15).

11. Claims 9-12, 35-37, 39, 40, 42, 43, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smedberg and the admitted prior art as applied above in paragraph 9, and further in view of Bieser et al. (WO 98/38375).

Regarding claims 9-12, Smedberg and the admitted prior art are silent as to the tufted carpet comprising a primary backing made of a woven polypropylene and face yarns made of nylon, polyester, or polypropylene filaments. One of ordinary skill in the art at the time invention was made would have readily appreciated the primary backing taught by Smedberg as

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modified by the admitted prior art comprising woven polypropylene as it was well known in the art to form the primary backing of a tufted carpet as a woven material as shown for example by Bieser et al. as only the expected results would be achieved. As to the face yarns, one of ordinary skill in the art at the time invention was made would have readily appreciated the face yarns taught by Smedberg as modified by the admitted prior art to comprise nylon, polyester, or polypropylene filaments as it was well known in the art to form the face yarns of a tufted carpet from these materials as shown for example by Bieser et al., only the expected results would be achieved.

Regarding claims 35-37, 39, 40, 42, 43, and 45, Smedberg and the admitted prior art are silent as to the primary backing or the additional backing comprising woven polypropylene tapes or yarns with an optional thermoplastic binder in the form of a nonwoven fabric needled thereto. Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated using as the primary backing or additional backing taught by Smedberg as modified by the admitted prior art a backing comprising woven polypropylene tapes or yarns with an optional thermoplastic binder in the form of a nonwoven fabric needled thereto as this was a known backing in the art for tufted carpets as shown by Bieser et al.

Bieser et al. are directed to a process for manufacturing a tufted carpet. Bieser et al. teach a tufted carpet comprising a primary backing material such as woven or non-woven polypropylene (Page 1, lines 36-37 and Page 2, lines 1-3). Bieser et al. teach the face yarn of the tufted carpet is made from various materials including nylon, polyester, and polypropylene (Page 30, lines 17-19). Bieser et al. teach a method for manufacturing the tufted carpet comprising supplying a tufted primary backing having a bottom surface (stitched side), applying to the

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bottom surface an aqueous pre-coat solution (stitch bind composition), drying the pre-coat, extruding a thermoplastic binder on the pre-coat, and laminating a secondary backing (additional backing) to the thermoplastic binder (Page 32, lines 28-30, Page 35, lines 21-23 and 30-33 and Page 36, lines 1-3). Bieser et al. teach the pre-coat comprises an aqueous component and an organic polymer component that is film forming and thermoplastic (e.g. polyethylene, ethylene acrylic acid, etc.) (Page 32, lines 30-33 and Page 33, lines 1-3). Bieser et al. teach the organic polymer component is 10 to 75 percent by weight of the pre-coat (Page 33, lines 5-8). Bieser et al. teach the pre-coat has a viscosity of 3000-50000 cps (Page 34, lines 16-18). Bieser et al. teach the pre-coat adhesive is applied in amounts of 4-12 oz/yd of carpet (Page 35, lines 12-16). Bieser et al. further teach the backing materials may comprise woven polypropylene yarns (leno weave) with an optional thermoplastic binder in the form of nonwoven polypropylene fibers needled thereto (Page 44, lines 5-8, 21-25, and 29-32 and Page 45, lines 26-30).

12. Claims 1-5, 9-15, 18, 19, 21-27, and 34-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bieser et al. in view of Smedberg.

Bieser et al. are directed to a process for manufacturing a tufted carpet. Bieser et al. teach a tufted carpet comprising a primary backing material such as woven or non-woven polypropylene (Page 1, lines 36-37 and Page 2, lines 1-3). Bieser et al. teach the face yarn of the tufted carpet is made from various materials including nylon, polyester, and polypropylene (Page 30, lines 17-19). Bieser et al. teach a method for manufacturing the tufted carpet comprising supplying a tufted primary backing having a bottom surface (stitched side), applying to the bottom surface an aqueous pre-coat solution (stitch bind composition), drying the pre-coat, extruding a thermoplastic binder on the pre-coat, and laminating a secondary backing (additional

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backing) to the thermoplastic binder (Page 32, lines 28-30, Page 35, lines 21-23 and 30-33 and Page 36, lines 1-3). Bieser et al. teach the pre-coat comprises an aqueous component and an organic polymer component that is film forming and thermoplastic (e.g. polyethylene, ethylene acrylic acid, etc.) (Page 32, lines 30-33 and Page 33, lines 1-3). Bieser et al. teach the organic polymer component is 10 to 75 percent by weight of the pre-coat (Page 33, lines 5-8). Bieser et al. teach the pre-coat has a viscosity of 3000-50000 cps (Page 34, lines 16-18). Bieser et al. teach the pre-coat adhesive is applied in amounts of 4-12 osy of carpet (Page 35, lines 12-16). Bieser et al. further teach the backing materials may comprise woven polypropylene yarns (leno weave) with an optional thermoplastic binder in the form of nonwoven polypropylene fibers needled thereto (Page 44, lines 5-8, 21-25, and 29-32 and Page 45, lines 26-30).

Regarding claims 1, 4, 13, 23-27, 38, 41, and 44, Bieser et al. are silent as to the pre-coat having a viscosity less than 3000 cps. Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated the pre-coat taught by Bieser et al. having a viscosity less than 3000 cps as it was known in the art to use pre-coats with low viscosities, 2-2000 cps, to ensure the pre-coat can readily penetrate the fiber bundles of the stitched side of the primary backing as shown above by Smedberg.

Regarding claims 1 and 23-27, Bieser et al. are silent as to applying the pre-coat in an amount less than 4 osy. One of ordinary skill in the art at the time the invention was made would have readily appreciated applying the pre-coat taught by Bieser et al. in an amount less than 4 osy as it was known in the art as shown above by Smedberg, only the expected results would be achieved. Furthermore, it is noted Smedberg teaches the necessary amount of pre-coat adhesive is dependent on the carpet yarn density and the effectiveness of the adhesive itself.

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Regarding claim 21, Bieser et al. are silent as to the organic polymer component of the pre-coat comprising a styrene butadiene copolymer. Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated using as the organic polymer taught by Bieser et al. a styrene butadiene copolymer as this was a known organic polymer component for use in pre-coat adhesives as shown above by Smedberg.

Regarding claim 26, Bieser et al. are silent as to applying the thermoplastic binder in a manner other than extrusion such as by coating. Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated applying the thermoplastic binder taught by Bieser et al. through coating the binder rather than extruding the binder as this technique for applying a thermoplastic binder (coating) to a tufted primary backing was well known in the art as shown for example above by Smedberg.

13. Claims 6-8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bieser et al. and Smedberg as applied above in paragraph 12, and further in view of Kato (U.S. Patent 4,836,871) and Bogdany (U.S. Patent 4,836,871).

Regarding claims 6-8, Bieser et al. and Smedberg as applied above teach all of the limitations in claims 6-8 except for a teaching on applying the aqueous pre-coat as a spray, foam, or froth. It is noted Bieser et al. teach the pre-coat can be applied in various ways (Page 35, lines 6-9), and Smedberg teaches the pre-coat can be applied by means other than applicator rolls (coating) (Column 3, lines 37-41). Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated applying the aqueous pre-coat taught by Bieser et al. as modified by Smedberg as a spray, foam, or froth as it was well known

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in the art to apply aqueous binders using these techniques as shown for example above by Kato and Bogdany.

Regarding claim 20, Bieser et al. and Smedberg as applied above teach all of the limitations in claim 20 except for a teaching on the organic polymer component of the aqueous pre-coat comprising a styrene acrylate copolymer. Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated using as the organic polymer component taught by Bieser et al. as modified by Smedberg a styrene acrylate copolymer as it was a known organic polymer component for use in an aqueous binder composition as shown above by Kato.

14. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bieser et al. and Smedberg as applied above in paragraph 12, and further in view of the admitted prior art (Specification pages 1-7).

Bieser et al. and Smedberg as applied above teach all of the limitations in claims 16 and 17 except for a teaching on the organic polymer component of the pre-coat comprising a crosslinkable organic polymer. Absent any unexpected results, one of ordinary skill in the art at the time the invention was made would have readily appreciated using as the organic polymer taught by Bieser et al. as modified by Smedberg a crosslinkable organic polymer such as crosslinked styrene butadiene copolymer as crosslinkable organic polymers were known binders in the art as shown above by the admitted prior art.

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Response to Arguments

15. Applicant's arguments with respect to claims 1-27 and 41-45 have been considered but are moot in view of the new ground(s) of rejection. Applicant argues Bieser et al. do not teach the claimed viscosity and application rates of the pre-coat material. Smedberg is cited as an example of a pre-coat composition having the claimed viscosity and application rates. Applicant further argues Bieser et al. do not teach the use of a solid thermoplastic binder. It is noted the claims disclose the thermoplastic binder as either an extruded binder or a softened/melted solid binder. Furthermore, the admitted prior art (Claim 1 and Specification pages 1-7) is cited as evidence that it is known to apply the thermoplastic binder as a softened/melted solid to the primary backing of the tufted carpet.

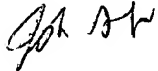
Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **703-305-7481**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



John L. Goff
January 17, 2003



Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700